

IN THE CLAIMS:

1-6. (Cancelled).

7. (Currently Amended) A receiver portion for selectively converting a GPS signal and a second RF signal to a lower frequency signal in a wireless handset, comprising:

a GPS control signal generator for generating a GPS control signal;

a band select switch coupled connected to the GPS control signal

generator for selecting the GPS signal or the second RF signal, responsive to the GPS control signal;

a mixer coupled connected to the band select switch for receiving the selected signal and to a local oscillator for converting the selected signal to the lower frequency signal, wherein the lower frequency signal is an IF signal;

a GPS antenna assembly for receiving the GPS signal;

a second RF signal antenna assembly for receiving the second RF signal;

and

an IF filter connected to the mixer and constructed to filter the IF signal, wherein a low side injection of a local oscillator is used for mixing the GPS signal down to the IF signal.

8. (Original) The receiver portion of claim 7, wherein:

an oscillating frequency of the local oscillator is substantially equal to 1391 MHz.

9-10. (Cancelled).

11. (Currently amended) The A receiver portion of claim 7, wherein: for selectively converting a GPS signal and a second RF signal to a lower frequency signal in a wireless handset, comprising:

~~a GPS control signal generator for generating a GPS control signal;~~
~~a band select switch coupled to the GPS control signal generator for selecting the GPS signal or the second RF signal, responsive to the GPS control signal;~~
~~a mixer coupled to the band select switch for receiving the selected signal and to a local oscillator for converting the selected signal to the lower frequency signal wherein the lower frequency signal is an IF signal and wherein the IF signal is substantially equal to 183.6 MHz;~~
~~a GPS antenna assembly for receiving the GPS signal; and~~
~~a second RF signal antenna assembly for receiving the second RF signal.~~

12. (Currently Amended) A receiver portion for selectively converting a GPS signal and a second RF signal to a lower frequency signal in a wireless handset, comprising:

a GPS control signal generator for generating a GPS control signal;
a band select switch coupled connected to the GPS control signal generator for selecting the GPS signal or the second RF signal, responsive to the GPS control signal;
a mixer coupled connected to the band select switch for receiving the selected signal and to a local oscillator for converting the selected signal to the lower frequency signal;
a GPS antenna assembly for receiving the GPS signal;
a second RF signal antenna assembly for receiving the second RF signal;
a GPS low noise amplifier coupled connected to the GPS antenna and to the band select switch for amplifying the GPS signal;

a PCS low noise amplifier coupled connected to the PCS second RF signal antenna and to the band select switch for amplifying the PCS second RF signal; and

a power supply connected to the GPS control signal generator for supplying power to the GPS low noise amplifier and to the PCS low noise amplifier, wherein:

the GPS control signal generator is coupled connected:

to a power line of the GPS low noise amplifier for coupling connecting the power supply to the GPS low noise amplifier when the GPS control signal is on and;

to a power line of the PCS low noise amplifier for coupling connecting the power supply to the PCS low noise amplifier when the GPS control signal is off.

13. (Currently amended) The A receiver portion of claim 12, further comprising: for converting an RF signal to an intermediate frequency signal in a wireless communication device, comprising:

~~a GPS control signal generator for generating a GPS control signal;~~

~~a diplexer connected to the GPS antenna for isolating a the GPS signal from a the second RF signal;.~~

~~a local oscillator for generating a local oscillator signal;~~

~~a mixer, coupled to the diplexer for receiving the GPS signal and the second RF signal and to the local oscillator for receiving the local oscillator signal, for converting the received signals into a lower frequency signal;~~

~~a lower frequency filter coupled to the mixer and constructed to transmit a lower frequency signal that is indicative of a selected signal that is a member of the group consisting of the GPS signal and the second RF signal;~~

~~a GPS antenna assembly for receiving the GPS signal; and~~
~~a second RF signal antenna assembly for receiving the second RF signal.~~

14. (Currently amended) The receiver portion of claim 13, wherein the GPS antenna and the second RF signal antenna assemblies are the same antenna assembly.

15. (Original) The receiver portion of claim 13, wherein the lower frequency signal is an IF signal.

16. (Original) The receiver portion of claim 13, wherein the second RF signal is a PCS signal.

17. (Cancelled).

18. (Original) The receiver portion of claim 15, wherein: a low side injection of the local oscillator is used for mixing the GPS signal down to the IF signal.

19. (Original) The receiver portion of claim 13, wherein: a oscillating frequency of the local oscillator is substantially equal to 1391 MHz.

20. (Currently amended) The receiver portion of claim 17 15, wherein: the second RF signal is a PCS signal; and

a high side injection of the local oscillator is used for mixing the PCS signal down to the IF signal.

21. (Original) The receiver portion of claim 15, wherein:
the IF signal is substantially equal to 183.6 MHz.

22. (Currently amended) ~~The receiver portion of claim 16, further comprising:~~ A receiver portion for converting an RF signal to an intermediate frequency signal in a wireless communication device, comprising:

a GPS control signal generator for generating a GPS control signal;
a diplexer for isolating a GPS signal from a second RF signal;
a local oscillator for generating a local oscillator signal;
a mixer, connected to the diplexer for receiving the GPS signal and the second RF signal and to the local oscillator for receiving the local oscillator signal, for converting the received signals into a lower frequency signal;
a lower frequency filter connected to the mixer and constructed to transmit a lower frequency signal that is indicative of a selected signal that is either the GPS signal or the second RF signal;
a GPS antenna for receiving the GPS signal;
a second RF signal antenna for receiving the second RF signal, wherein the second RF signal is a PCS signal; and
a GPS low noise amplifier ~~couple~~ connected to the GPS antenna and to the diplexer for amplifying the GPS signal;
a PCS low noise amplifier ~~coupled~~ connected to the PCS antenna and to the diplexer for amplifying the PCS signal;

a power supply connected to the GPS control signal generator for supplying power to the GPS low noise amplifier and to the PCS low noise amplifier wherein:

the GPS control signal generator is ~~coupled~~ connected to a power line of the GPS low noise amplifier and to a power line of the PCS low noise amplifier for ~~coupling~~ connecting the power supply to the GPS low noise amplifier when the GPS control signal is on and for ~~coupling~~ connecting the power supply to the PCS low noise amplifier when the GPS control signal is off.

23. (Currently amended) A receiver portion for converting a GPS signal and a second RF signal to an intermediate frequency (IF) signal comprising:

a GPS control signal generator for generating a GPS control signal; a local oscillator ~~source~~ configured to generate a GPS local oscillator signal and a second RF signal local oscillator signal wherein the ~~PGS GPS~~ control signal generator is ~~coupled~~ connected to the local oscillator ~~source~~ for selecting ~~one of a member of a group consisting of either the second~~ RF signal local oscillator signal and ~~or the PGS GPS~~ local oscillator signal;

a GPS antenna assembly for receiving the GPS signal; and a second RF signal antenna assembly for receiving the second RF signal; a duplexer ~~coupled~~ connected to the GPS antenna assembly and to the second RF signal antenna assembly and configured to transmit the GPS signal and the second RF signal;

a mixer ~~coupled~~ connected to the local oscillator source and to the duplexer, the mixer constructed to convert the second RF signal to a first lower frequency signal and to convert the GPS signal to a second lower frequency signal;

a band pass filter coupled connected to the mixer, the filter configured to transmit ~~one of a member of the group consisting of~~ either the first lower frequency signal ~~and or~~ the second lower frequency signal;

a GPS low noise amplifier connected to the GPS antenna and to the duplexer for amplifying the GPS signal;

a PCS low noise amplifier connected to the PCS antenna and to the duplexer for amplifying the PCS signal; and

a power supply connected to the GPS control signal generator for supplying power to the GPS low noise amplifier and to the PCS low noise amplifier wherein:

the GPS control signal generator is connected to a power line of the GPS low noise amplifier and to a power line of the PCS low noise amplifier for connecting the power supply to the GPS low noise amplifier when the GPS control signal is on and for connecting the power supply to the PCS low noise amplifier when the GPS control signal is off.

24. (Currently Amended) The receiver portion of claim 23, wherein the GPS antenna and the second RF signal antenna assemblies are the same antenna assembly.

25. (Cancelled).

26. (Original) The receiver portion of claim 23, wherein the second RF signal is a PCS signal.

27-28. (Cancelled).

29. (Currently amended) The receiver portion of claim 25 23, wherein a low side injection of a the local oscillator is used for mixing the GPS signal down to the IF signal.

30. (Original) The receiver portion of claim 23, wherein an oscillating frequency of the local oscillator is substantially equal to 1391 MHz.

31. (Currently Amended) The receiver portion of claim 27 23, wherein: the second RF signal is a PCS signal, and;
a high side injection of a the local oscillator is used for mixing the PCS signal down to the IF signal.

32. (Original) The receiver portion of claim 26, wherein the IF signal is substantially equal to 183.6 MHz.

33-37. (Cancelled).

38. (Currently Amended) A receiver portion for receiving a GPS signal and a cellular CDMA signal comprising:
a GPS control signal generator for generating a GPS control signal;
a local oscillator ~~source~~ configured to generate a GPS local oscillator signal and a cellular CDMA signal local oscillator signal wherein the GPS control signal generator is ~~coupled~~ connected to the local oscillator ~~source~~ for selecting ~~one of a member of a group consisting of either the cellular CDMA RF signal~~ local oscillator signal and or the GPS local oscillator signal;
a GPS antenna assembly for receiving the GPS signal; and

a cellular CDMA signal antenna assembly for receiving the second RF cellular CDMA signal;

a first mixer coupled connected to the local oscillator source and to the GPS antenna assembly, the first mixer constructed to convert the GPS GS signal to a first lower frequency signal, wherein the first lower frequency signal is ~~an~~ a first IF signal;

a second mixer coupled connected to the local oscillator source and to the cellular CDMA antenna assembly, the second mixer constructed to convert the GPS signal to a second lower frequency signal, wherein the second lower frequency signal is a second IF signal; and

a band pass filter coupled connected to the first mixer and to the second mixer, the band pass filter configured to transmit ~~one of a member of the group consisting of either~~ the first lower frequency signal and or the second lower frequency signal and wherein a low side injection of ~~a~~ the local oscillator is used for mixing the GPS signal down to the IF signal.

39. (Original) The receiver portion of claim 38, wherein an oscillating frequency of the local oscillator is substantially equal to 1391 MHz.

40. (Currently Amended) A receiver portion for receiving a GPS signal and a cellular CDMA signal comprising:

a GPS control signal generator for generating a GPS control signal;
a local oscillator source configured to generate a GPS local oscillator signal and a cellular CDMA signal local oscillator signal wherein the GPS control signal generator is coupled connected to the local oscillator source for selecting ~~one of a member of a group consisting of either~~ the RF signal cellular CDMA local oscillator signal and the GPS local oscillator signal;

a GPS antenna assembly for receiving the GPS signal;
a cellular CDMA signal antenna assembly for receiving the second RF
cellular CDMA signal;
a first mixer coupled connected to the local oscillator source and to the
GPS antenna assembly, the first mixer constructed to convert the ~~GS GPS~~ signal to a
first lower frequency signal, wherein the first lower frequency signal is ~~an~~ a first IF
signal;
a second mixer coupled connected to the local oscillator source and to the
cellular CDMA antenna assembly, the second mixer constructed to convert the ~~GPS~~
cellular CDMA signal to a second lower frequency signal, wherein the first lower
frequency signal is a second IF signal;
a band pass filter coupled connected to the first mixer and to the second
mixer, the band pass filter configured to transmit ~~one of a member of the group~~
~~consisting of either~~ the first lower frequency signal and or the second lower frequency
signal; and
a divide by two circuit coupled connected between the local oscillator
source and the second mixer for dividing an initial local oscillator signal by two to
produce ~~the~~ a second local oscillator signal, and wherein a high side injection of ~~a~~ the
local oscillator is used for mixing the cellular CDMA signal down to the IF signal.

41. (Currently amended) The A receiver portion of claim 40, wherein:
~~for receiving a GPS signal and a cellular CDMA signal comprising:~~
~~a GPS control signal generator for generating a GPS control signal;~~
~~a local oscillator source configured to generate a GPS local oscillator~~
~~signal and a cellular CDMA signal local oscillator signal wherein the GPS control signal~~
~~generator is coupled to the local oscillator source for selecting one of a member of a~~

~~group consisting of the RF signal local oscillator signal and the GPS local oscillator signal;~~

~~a GPS antenna assembly for receiving the GPS signal;~~

~~a cellular CDMA signal antenna assembly for receiving the second RF signal;~~

~~a first mixer coupled to the local oscillator source and to the GPS antenna assembly, the mixer constructed to convert the GS signal to a first lower frequency signal, wherein the first lower frequency signal is an IF signal, wherein the IF signal is substantially equal to 183.6 MHz;~~

~~a second mixer coupled to the local oscillator source and to the cellular CDMA antenna assembly, the mixer constructed to convert the GPS signal to a second lower frequency signal; and~~

~~a band pass filter coupled to the first mixer and to the second mixer, the filter configured to transmit one of a member of the group consisting of the first lower frequency signal and the second lower frequency signal.~~

42. (Cancelled).

43. (Currently amended) The A receiver portion of claim 40, further comprising: for receiving a GPS signal and a cellular CDMA signal comprising:

~~a GPS control signal generator for generating a GPS control signal;~~

~~a local oscillator source configured to generate a GPS local oscillator signal and a cellular CDMA signal local oscillator signal wherein the GPS control signal generator is coupled to the local oscillator source for selecting one of a member of a group consisting of the RF signal local oscillator signal and the GPS local oscillator signal;~~

~~a GPS antenna assembly for receiving the GPS signal;~~

~~a cellular CDMA signal antenna assembly for receiving the second RF signal;~~

~~a first mixer coupled to the local oscillator source and to the GPS antenna assembly, the mixer constructed to convert the GS signal to a first lower frequency signal;~~

~~a second mixer coupled to the local oscillator source and to the cellular CDMA antenna assembly, the mixer constructed to convert the GPS signal to a second lower frequency signal;~~

~~a band pass filter coupled to the first mixer and to the second mixer, the filter configured to transmit one of a member of the group consisting of the first lower frequency signal and the second lower frequency signal; and~~

~~a diplexer coupled connected between the GPS antenna and the first mixer for coupling connecting the GPS signal to the first mixer.~~

44. (Currently amended) ~~The A receiver portion of claim 40, further comprising: for receiving a GPS signal and a cellular CDMA signal comprising:~~

~~a GPS control signal generator for generating a GPS control signal;~~

~~a local oscillator source configured to generate a GPS local oscillator signal and a cellular CDMA signal local oscillator signal wherein the GPS control signal generator is coupled to the local oscillator source for selecting one of a member of a group consisting of the RF signal local oscillator signal and the GPS local oscillator signal;~~

~~a GPS antenna assembly for receiving the GPS signal;~~

~~a cellular CDMA signal antenna assembly for receiving the second RF signal;~~

~~a first mixer coupled to the local oscillator source and to the GPS antenna assembly, the mixer constructed to convert the GS signal to a first lower frequency signal;~~

~~a second mixer coupled to the local oscillator source and to the cellular CDMA antenna assembly, the mixer constructed to convert the GPS signal to a second lower frequency signal;~~

~~a band pass filter coupled to the first mixer and to the second mixer, the filter configured to transmit one of a member of the group consisting of the first lower frequency signal and the second lower frequency signal; and~~

~~a duplexer coupled connected between the GPS antenna and the first mixer for coupling connecting the GPS signal to the first mixer.~~

45-48. (Cancelled).

49. (Currently Amended) A receiver portion for receiving a GPS signal and a cellular CDMA signal comprising:

a GPS control signal generator for generating a GPS control signal;

a local oscillator source configured to generate a GPS local oscillator signal and a cellular CDMA signal local oscillator signal wherein the GPS control signal generator is coupled connected to the local oscillator source for selecting one of a member of a group consisting of either the RF signal cellular CDMA local oscillator signal and or the GPS local oscillator signal;

a GPS antenna assembly for receiving the GPS signal;

a cellular CDMA signal antenna assembly for receiving the second RF cellular CDMA signal;

a first mixer coupled connected to the local oscillator source and to the GPS antenna assembly, the first mixer constructed to convert the GS GPS signal to a

first lower frequency signal, wherein the first lower frequency signal comprises an a first IF signal;

a second mixer coupled connected to the local oscillator source and to the cellular CDMA antenna assembly, the second mixer constructed to convert the GPS signal to a second lower frequency signal, wherein the second lower frequency signal comprises a second IF signal;

a band pass filter coupled to the first mixer and to the second mixer, the band pass filter configured to transmit ~~one of a member of the group consisting of either~~ the first lower frequency signal and or the second lower frequency signal; and

~~a second RF signal antenna assembly coupled to the first mixer for receiving a second RF signal and to the local oscillator for converting, responsive to the GPS control signal, either the GPS signal or the second RF signal to the first lower frequency signal; and~~

a divide by two circuit coupled connected between the local oscillator source and the second mixer for dividing an initial local oscillator signal by two to produce the a second local oscillator signal wherein:

a high side injection of a the local oscillator is used for mixing the cellular CDMA signal down to the second IF signal.

50-64. (Cancelled).

65. (Currently Amended) A method of down converting a GPS signal to an intermediate frequency signal that is indicative of the GPS signal, comprising:

~~providing a mixer configured to convert a second RF signal and the GPS signal to a lower frequency signal, wherein the second RF signal comprises a PCS signal;~~

mixing, using the mixer, ~~the a~~ second RF signal with a first local oscillator signal, wherein the second RF signal comprises a PCS signal;

converting the PCS signal to a lower frequency signal;

generating a GPS control signal;

decoupling the ~~second RF PCS~~ signal from the mixer, responsive to the GPS control signal;

mixing, using the mixer, the GPS signal with a second local oscillator signal, wherein the second step of mixing comprises injecting a local oscillator signal on a ~~high~~ low side of the GPS signal.

66-69. (Cancelled).